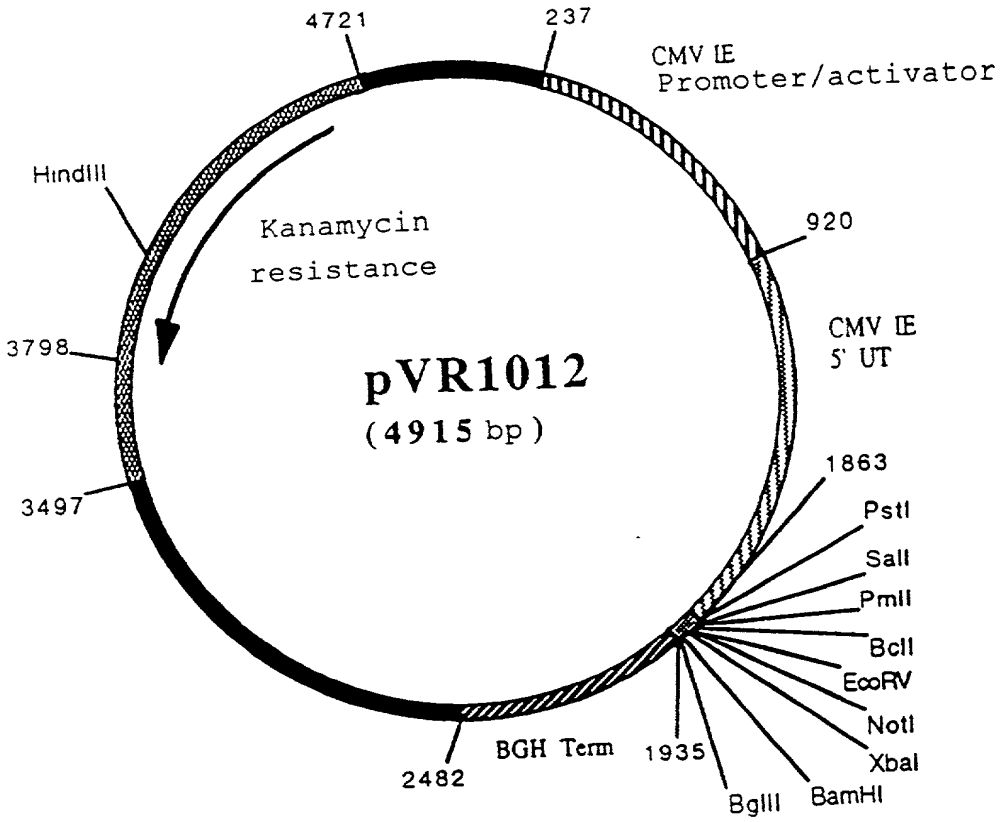
4721
237
CMV IE
Promoter/activator
HindIII
Kanamycin
resistance
920
CMV IE
5' UT
3798
pVR1012
(4915 bp)
1863
PstI
SalI
PmlI
BclI
EcoRV
NotI
XbaI
3497
BGH Term
1935
2482
BglII
BamHI

Figure No. 1

```
   1 ATGGCCGCTCGCGGCGGTGCTGAACGCGCCGCGGGCGCCGGAGACGGTCGGCGAGGACAGCGT
   1 MetAlaAlaArgGlyGlyAlaGluArgAlaAlaGlyAlaGlyAspGlyArgArgGlyGlnArg

  64 CGTCATCTACGACCGGGACGTGTTCTCGCTGCTCTACGCGGTCCTGCAGCGCCTGGCGCCGGC
  22 ArgHisLeuArgProGlyArgValLeuAlaAlaLeuArgGlyProAlaAlaProGlyAlaGly

 127 GGGGCGCGCGCCGCGCTAGCCGCTGCCCTGCTATGGGCGACGTGGGCCCTGCTGCTGGCGGCG
  43 GlyAlaArgAlaAlaLeuAlaAlaAlaLeuLeuTrpAlaThrTrpAlaLeuLeuLeuAlaAla

 190 CCCGCCGCGGGGGCGACCGGCGACAACGCCCCCGGCGCCCCCGCCCGAAGAGGCCGCGAGCCCG
  64 ProAlaAlaGlyArgProAlaThrThrProProAlaProProProGluGluAlaAlaSerPro

 253 GCGCCCCCCGCGAGCCCCAGCCCCCCCGGCCCCGACGGCGACGACGCCGCCAGCCCCGACAAC
  85 AlaProProAlaSerProSerProProGlyProAspGlyAspAspAlaAlaSerProAspAsn

 316 AGCACAGACGTGCGCGCCGCGCTCCGGCTCGCGCAGGCGGCCGGGGAAAACTCGCGCTTCTTC
 106 SerThrAspValArgAlaAlaLeuArgLeuAlaGlnAlaAlaGlyGluAsnSerArgPhePhe

 379 GTGTGCCCGCCGCCCTCGGGCGCCACGGTGGTCCGGCTCGCGCCCGCGCGGCCGTGCCCTGAG
 127 ValCysProProProSerGlyAlaThrValValArgLeuAlaProAlaArgProCysProGlu

 442 TACGGGCTCGGGCGGAACTACACGGAGGGCATCGGCGTCATTTACAAGGAGAACATCGCGCCG
 148 TyrGlyLeuGlyArgAsnTyrThrGluGlyIleGlyValIleTyrLysGluAsnIleAlaPro

 505 TACACGTTCAAGGCCTACATTTACAAAAACGTGATCGTGACCACGACCTGGGCGGGCAGCACG
 169 TyrThrPheLysAlaTyrIleTyrLysAsnValIleValThrThrThrTrpAlaGlySerThr

 568 TACGCGGCCATTACAAACCAGTACACGGACCGCGTGCCCGTGGGCATGGGCGAGATCACGGAC
 190 TyrAlaAlaIleThrAsnGlnTyrThrAspArgValProValGlyMetGlyGluIleThrAsp

 631 CTGGTGGACAAGAAGTGGCGCTGCCTTTCGAAAGCCGAGTACCTGCGCAGCGGGCGCAAGGTG
 211 LeuValAspLysLysTrpArgCysLeuSerLysAlaGluTyrLeuArgSerGlyArgLysVal

 694 GTGGCCTTTGACCGCGACGACGACCCCTGGGAGGCGCCGCTGAAGCCTGCGCGGCTGAGCGCG
 232 ValAlaPheAspArgAspAspAspProTrpGluAlaProLeuLysProAlaArgLeuSerAla

 757 CCCGGGGTGCGGGGCTGGCACACGACGGACGATGTGTACACGGCGCTGGGCTCGGCGGGGCTC
 253 ProGlyValArgGlyTrpHisThrThrAspAspValTyrThrAlaLeuGlySerAlaGlyLeu

 820 TACCGCACGGGCACCTCTGTGAACTGCATCGTGGAAGAAGTGGAGGCGCGCTCGGTGTACCCG
 274 TyrArgThrGlyThrSerValAsnCysIleValGluGluValGluAlaArgSerValTyrPro

 883 TACGACTCGTTCGCGCTCTCGACCGGGGACATTATCTACATGTCGCCCTTTTACGGGCTGCGC
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 946 GAGGGCGCGCACCGCGAGCACACCAGGCTACTCGCCGGAGCGCTTCCAGCAGATCGAGGGCTA
 316 GluGlyAlaHisArgGluHisThrArgLeuLeuAlaGlyAlaLeuProAlaAspArgGlyLeu

1009 CTACAAGCGCGACATGGCCACGGGCCGGCGCCTCAAGGAGCCGGTCTCGCGGAACTTTTTGCG
 337 LeuGlnAlaArgHisGlyHisGlyProAlaProGlnGlyAlaGlyLeuAlaGluLeuPheAla

1072 TACACAGCACGTGACGGTAGCCTGGGACTGGGTGCCCAAGCGCAAAAACGTGTGCTCGCTGGC
 358 TyrThrAlaArgAspGlySerLeuGlyLeuGlyAlaGlnAlaGlnLysArgValLeuAlaGly
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Figure No. 2

1135 CAAGTGGCGCGAGGCGGACGAAATGCTGCGAGACGAGAGCCGCGGGAACTTCCGCTTCACGGC
379 GlnValAlaArgGlyGlyArgAsnAlaAlaArgArgGluProArgGluLeuProLeuHisGly

1198 CCGCTCGCTCTCGGCGACCTTTGTGAGCGACAGCCACACCTTCGCGTTGCAGAATGTGCCGCT
400 ProLeuAlaLeuGlyAspLeuCysGluArgGlnProHisLeuArgValAlaGluCysAlaAla

1261 GAGCGACTGCGTGATCGAAGAGGCCGAGGCCGCGGTCGAGCGCGTCTACCGCGAGCGCTACAA
421 GluArgLeuArgAspArgArgGlyArgGlyArgGlyArgAlaArgLeuProArgAlaLeuGln

1324 CGGCACGCACGTGCTGTCGGGCAGCTTGGAGACGTACCTGGCGCGCGGCGGCTTTGTCGTGGC
442 ArgHisAlaArgAlaValGlyGlnLeuGlyAspValProGlyAlaArgArgLeuCysArgGly

1387 CTTCCGGCGATGCTCAGCAACGAGCTGGCCAAGCTGTACCTGCAGGAGCTGGCGCGCTCGAAC
463 LeuProAlaMetLeuSerAsnGluLeuAlaLysLeuTyrLeuGlnGluLeuAlaArgSerAsn

1450 GGCACGCTCGAGGGGCTGTTCGCCGCCGCGGCGCCCAAGCCGGGCCCGCGGCGCGCGCCGC
484 GlyThrLeuGluGlyLeuPheAlaAlaAlaAlaProLysProGlyProArgArgAlaArgArg

1513 GCCGCGCCGTCTGCGCCCGGCGGCCCGGGCGCGGCCAACGGGCCCGCCGGCGACGGCGACGCC
505 AlaAlaProSerAlaProGlyGlyProGlyAlaAlaAsnGlyProAlaGlyAspGlyAspAla

1576 GGCGGGCGGGTGACTACCGTGAGCTCGGCCGAGTTTGCGGCGCTGCAGTTCACCTACGACCAC
526 GlyGlyArgValThrThrValSerSerAlaGluPheAlaAlaLeuGlnPheThrTyrAspHis

1639 ATCCAGGACCACGTGAACACCATGTTCAGCCGCCTGGCCACGTCCTGGTGCCTGCTGCAGAAC
547 IleGlnAspHisValAsnThrMetPheSerArgLeuAlaThrSerTrpCysLeuLeuGlnAsn

1702 AAGGAGCGCGCCCTGTGGGCCGAGGCGGCTAAGCTCAACCCCAGCGCGGCGGCCAGCGCTGCG
568 LysGluArgAlaLeuTrpAlaGluAlaAlaLysLeuAsnProSerAlaAlaAlaSerAlaAla

1765 CTGGACCGCCGCGCCGCCGCGCGCATGTTGGGGGACGCCATGGCCGTGACGTACTGCCACGAG
589 LeuAspArgArgAlaAlaAlaArgMetLeuGlyAspAlaMetAlaValThrTyrCysHisGlu

1828 CTGGGCGAGGGGCGCGTGTTCATCGAGAACTCGATGCGCGCGCCCGGCGGCGTTTGCTACAGC
610 LeuGlyGluGlyArgValPheIleGluAsnSerMetArgAlaProGlyGlyValCysTyrSer

1891 CGCCCGCCGGTCTCCTTTGCCTTCGGCAACGAGAGCGAGCCGGTGGAGGGCCAGCTCGGCGAG
631 ArgProProValSerPheAlaPheGlyAsnGluSerGluProValGluGlyGlnLeuGlyGlu

1954 GACAACGAGCTGCTGCCGGGCCGCGAGCTCGTGGAGCCCTGCACCGCCAACCACAAGCGCTAC
652 AspAsnGluLeuLeuProGlyArgGluLeuValGluProCysThrAlaAsnHisLysArgTyr

2017 TTCCGCTTTGGCGCGGACTACGTGTACTACGAGAACTACGCGTACGTGCGGCGGGTCCCGCTC
673 PheArgPheGlyAlaAspTyrValTyrTyrGluAsnTyrAlaTyrValArgArgValProLeu

2080 GCGGAGCTGGAGGTGATCAGCACCTTTGTGGACCTAAACCTCACGGTTCTGGAGGACCGCGAG
694 AlaGluLeuGluValIleSerThrPheValAspLeuAsnLeuThrValLeuGluAspArgGlu

2143 TTCTTGCCGCTAGAAGTGTACACGCGCGCCGAGCTCGCCGACACGGGTCTGCTCGACTACAGC
715 PheLeuProLeuGluValTyrThrArgAlaGluLeuAlaAspThrGlyLeuLeuAspTyrSer

2206 GAGATACAGCGCCGCAACCAGCTGCACGAGCTCCGGTTCTACGACATTGACCGCGTGGTCAAG
736 GluIleGlnArgArgAsnGlnLeuHisGluLeuArgPheTyrAspIleAspArgValValLys

Figure No. 2 (continuation)

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2269 ACGGACGGCAATATGGCCATCATGCGAGGGCTCGCCAACTTCTTTCAGGGCCTGGGCGCCGTC
 757 ThrAspGlyAsnMetAlaIleMetArgGlyLeuAlaAsnPhePheGlnGlyLeuGlyAlaVal

2332 GGGCAGGCGGTGGGCACGGTGGTGCTGGGCGCCGCGGGTGCCGCGCTCTCGACCGTGTCGGGC
 778 GlyGlnAlaValGlyThrValValLeuGlyAlaAlaGlyAlaAlaLeuSerThrValSerGly

2395 ATCGCCTCGTTTATTGCGAACCCGTTCGGCGCGCTGGCCACGGGGCTGCTGGTGCTCGCCGGG
 799 IleAlaSerPheIleAlaAsnProPheGlyAlaLeuAlaThrGlyLeuLeuValLeuAlaGly

2458 CTGGTGGCCGCTTTCCTGGCGTACCGGTACATTTCCCGCCTCCGCAGCAACCCCATGAAGGCG
 820 LeuValAlaAlaPheLeuAlaTyrArgTyrIleSerArgLeuArgSerAsnProMetLysAla

2521 CTGTACCCGATCACCACGCGCGCGCTCAAGGACGACGCCCGGGGCGCAACCGCCCCGGGCGAG
 841 LeuTyrProIleThrThrArgAlaLeuLysAspAspAlaArgGlyAlaThrAlaProGlyGlu

2584 GAAGAGGAGGAGTTTGACGCGGCCAAACTGGAGCAGGCCCGCGAGATGATCAAGTATATGTCG
 862 GluGluGluGluPheAspAlaAlaLysLeuGluGlnAlaArgGluMetIleLysTyrMetSer

2647 CTCGTGTCAGCGGTCGAGCGGCAAGAGCACAAGGCGAAAAAGAGCAACAAGGGCGGCCCGCTG
 883 LeuValSerAlaValGluArgGlnGluHisLysAlaLysLysSerAsnLysGlyGlyProLeu

2710 CTGGCGACCCGGCTGACGCAGCTCGCGCTTCGGCGGCGAGCGCCGCCGGAGTACCAGCAGCTT
 904 LeuAlaThrArgLeuThrGlnLeuAlaLeuArgArgArgAlaProProGluTyrGlnGlnLeu

2773 CCGATGGCCGACGTCGGGGGGGCATGA
 925 ProMetAlaAspValGlyGlyAla•••
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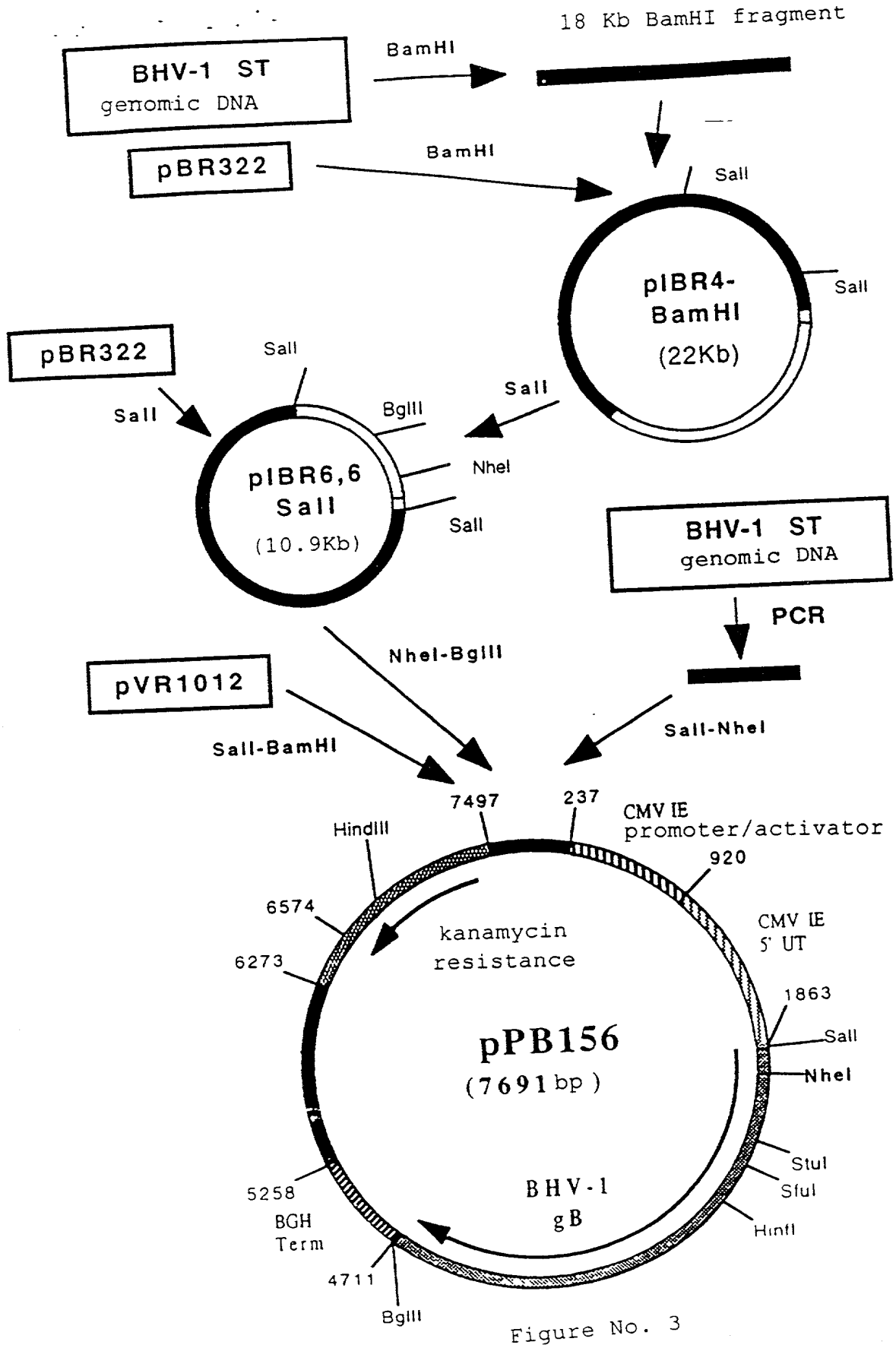
Figure No. 2 (end)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genomic DNA
BamHI
18 Kb BamHI fragment
pBR322
BamHI
SalI
pIBR4-
BamHI
(22Kb)
SalI
pBR322
SalI
SalI
BglII
SalI
NheI
pIBR6,6
SalI
(10.9Kb)
SalI
BHV-1 ST
genomic DNA
PCR
NheI-BglII
pVR1012
SalI-BamHI
SalI-NheI
7497
237
CMV IE
promoter/activator
HindIII
920
6574
CMV IE
5' UT
kanamycin
resistance
6273
1863
SalI
pPB156
(7691 bp)
NheI
StuI
SfuI
5258
BHV-1
gB
BGH
Term
HinfI
4711
BglII

Figure No. 3

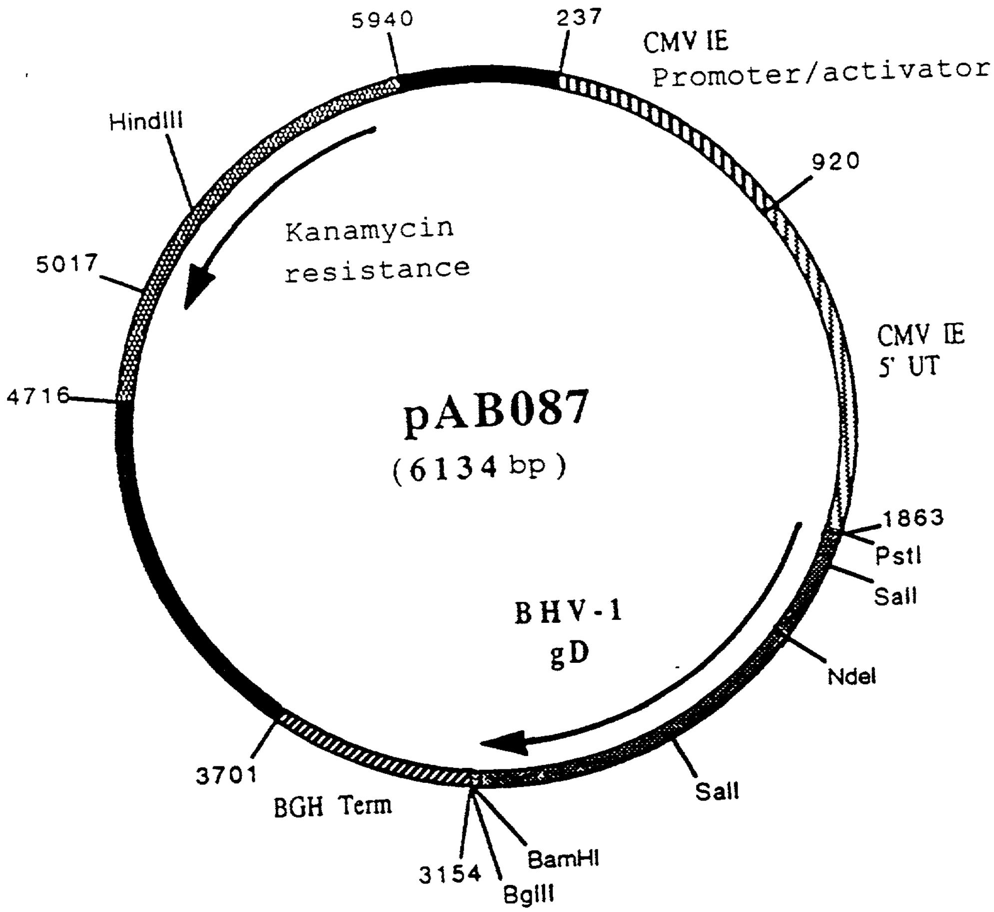

Figure No. 4

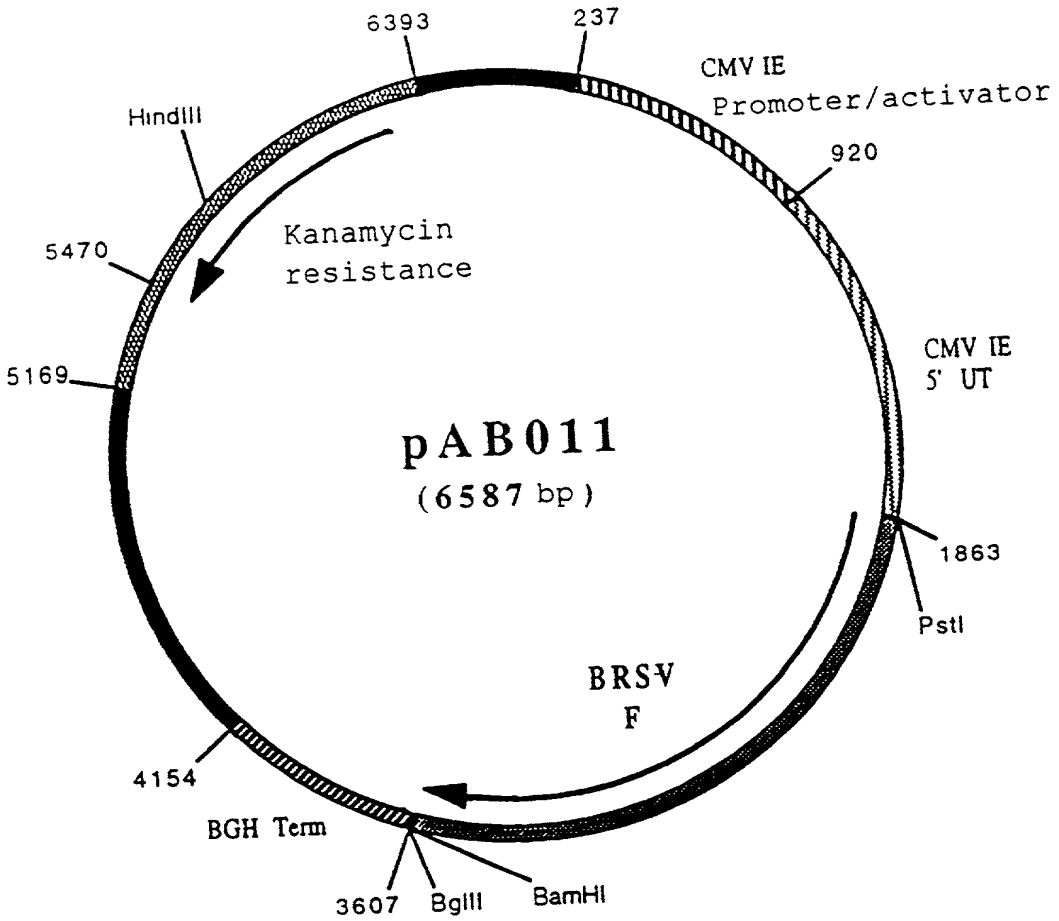
6393
237
CMV IE
Promoter/activator
920
HindIII
Kanamycin
resistance
5470
5169
CMV IE
5' UT
pAB011
(6587 bp)
1863
PstI
BRSV
F
4154
BGH Term
3607
BglII
BamHI

Figure No. 5

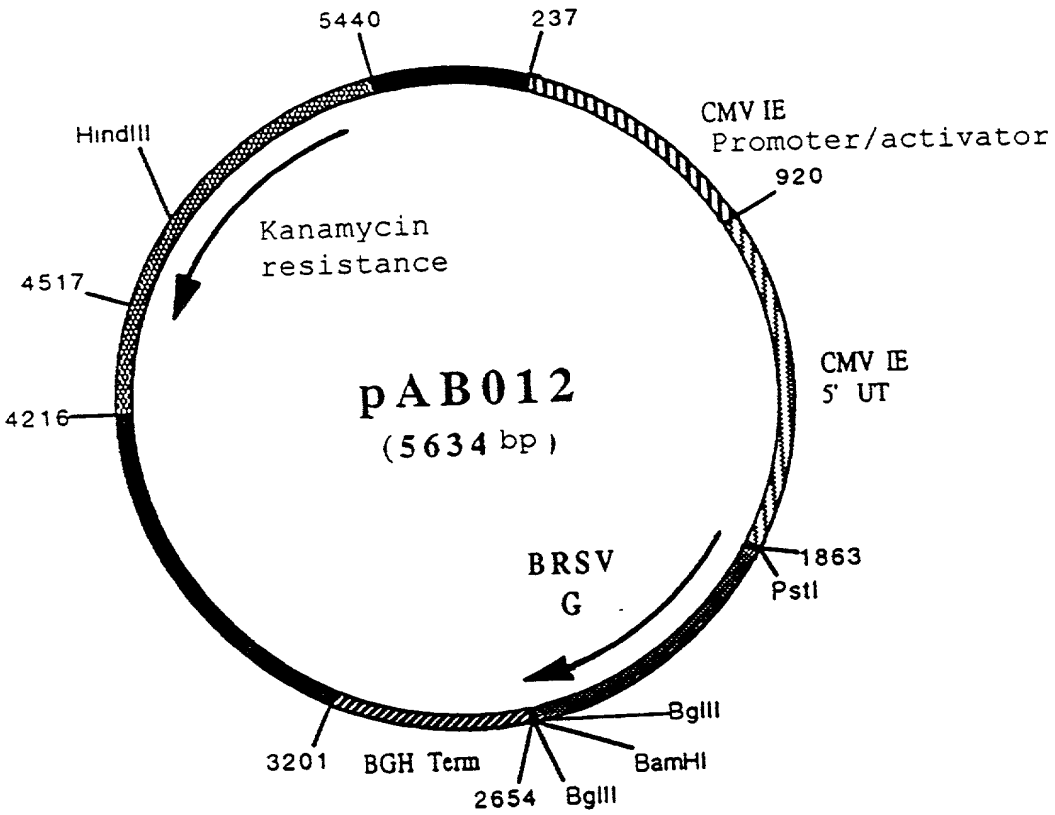
5440
237
CMV IE
Promoter/activator
920
HindIII
Kanamycin
resistance
4517
CMV IE
5' UT
pAB012
(5634 bp)
4216
BRSV
G
1863
PstI
BglII
3201
BGH Term
BamHI
2654
BglII

Figure No. 6

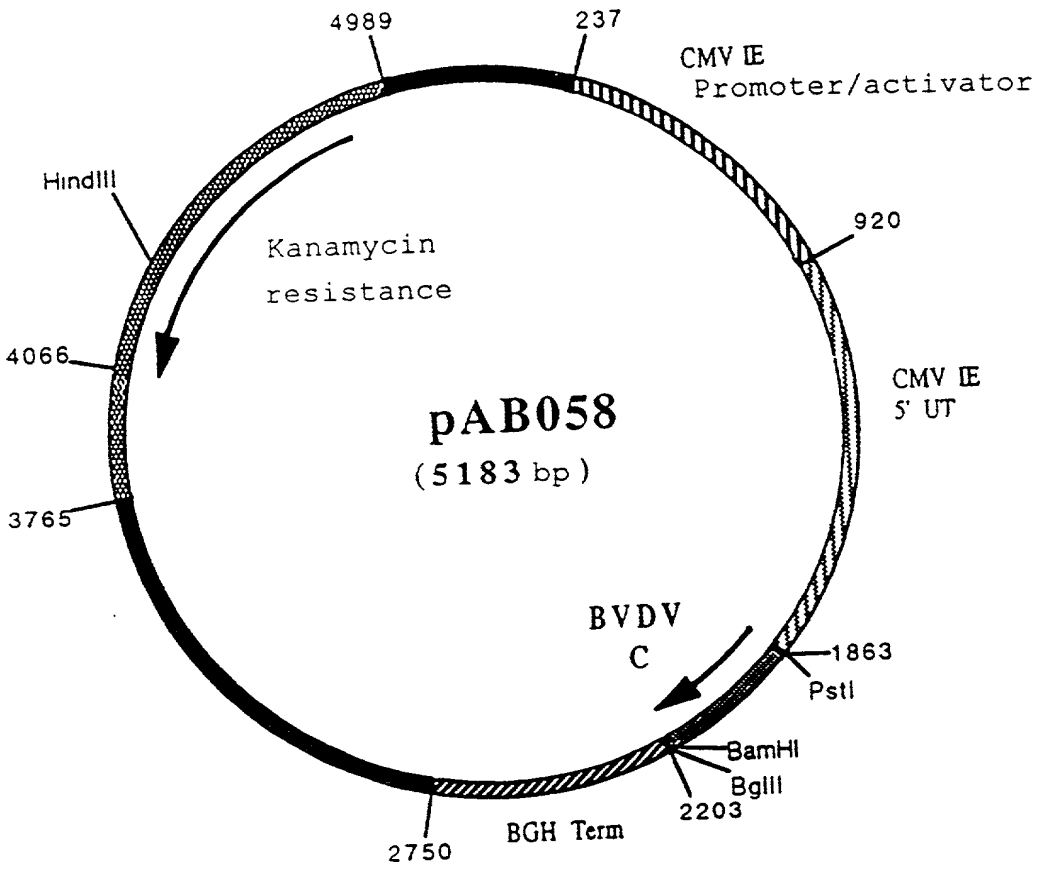
4989
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
4066
CMV IE
5' UT
pAB058
(5183 bp)
3765
BVDV
C
1863
PstI
BamHI
BglII
2203
2750
BGH Term

Figure No. 7

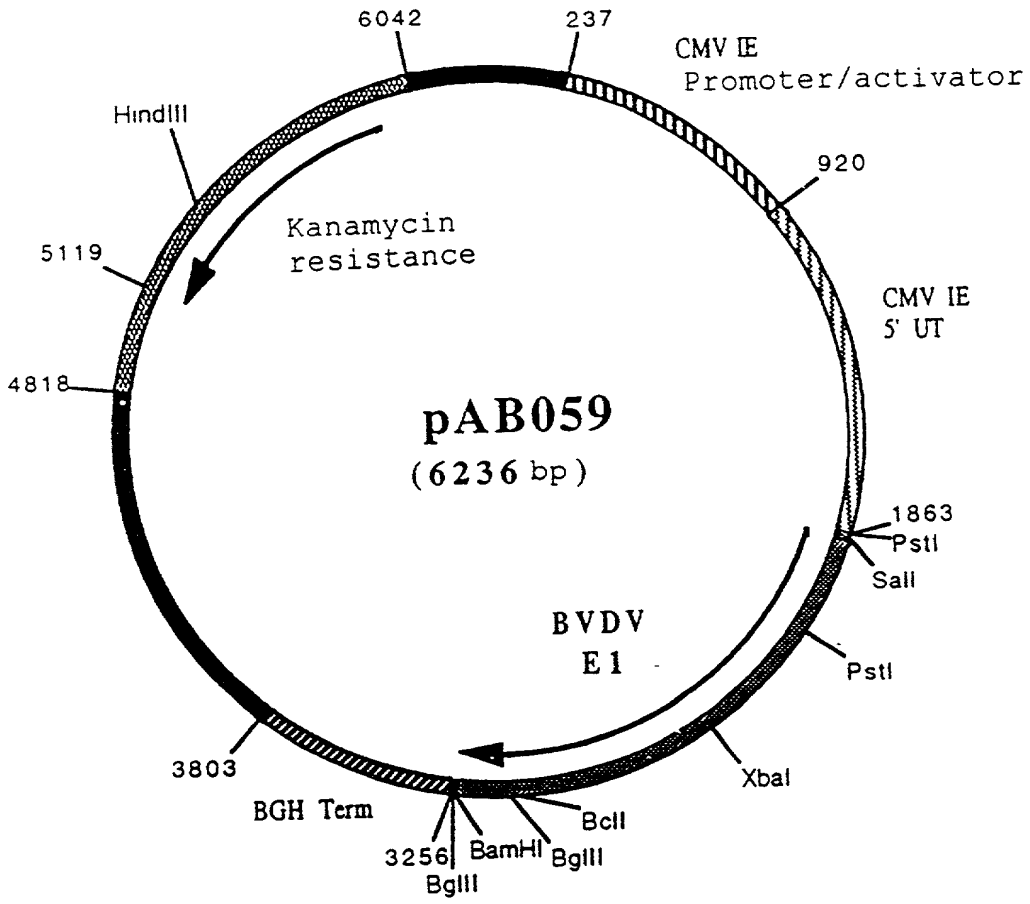
6042
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
5119
CMV IE
5' UT
4818
pAB059
(6236 bp)
1863
PstI
SalI
BVDV
E1
PstI
3803
XbaI
BGH Term
BclI
3256
BamHI
BglII
BglII

Figure No. 8

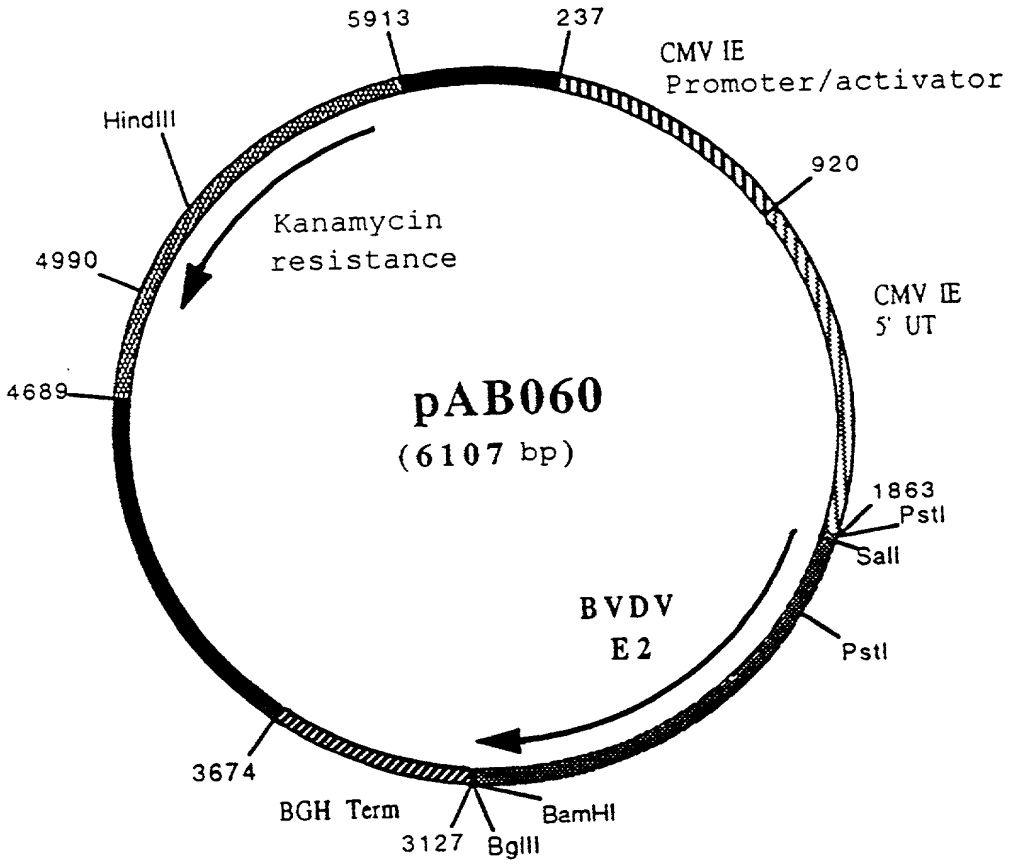
5913
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
4990
CMV IE
5' UT
4689
pAB060
(6107 bp)
1863
PstI
SalI
BVDV
E2
PstI
3674
BGH Term
BamHI
3127
BglII

Figure No. 9

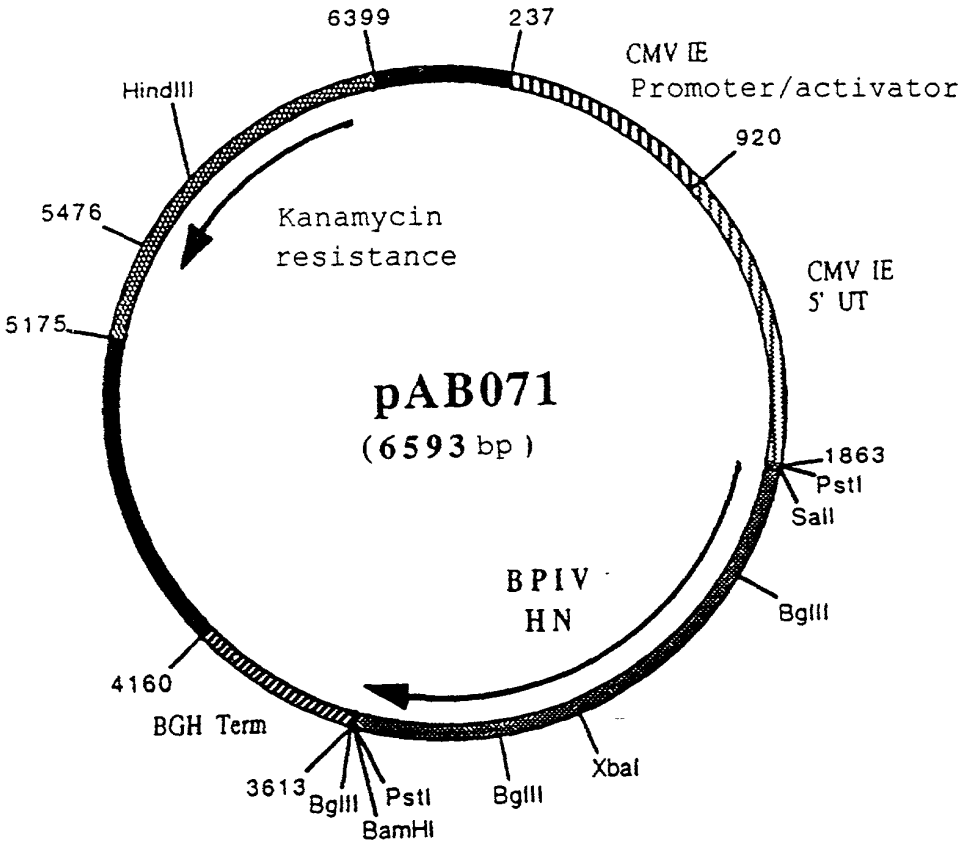
6399
237
CMV IE
Promoter/activator
HindIII
920
5476
Kanamycin
resistance
CMV IE
5' UT
5175
pAB071
(6593 bp)
1863
PstI
SalI
BPIV
HN
BglII
4160
BGH Term
3613
BglII
PstI
BamHI
BglII
XbaI

Figure No. 10

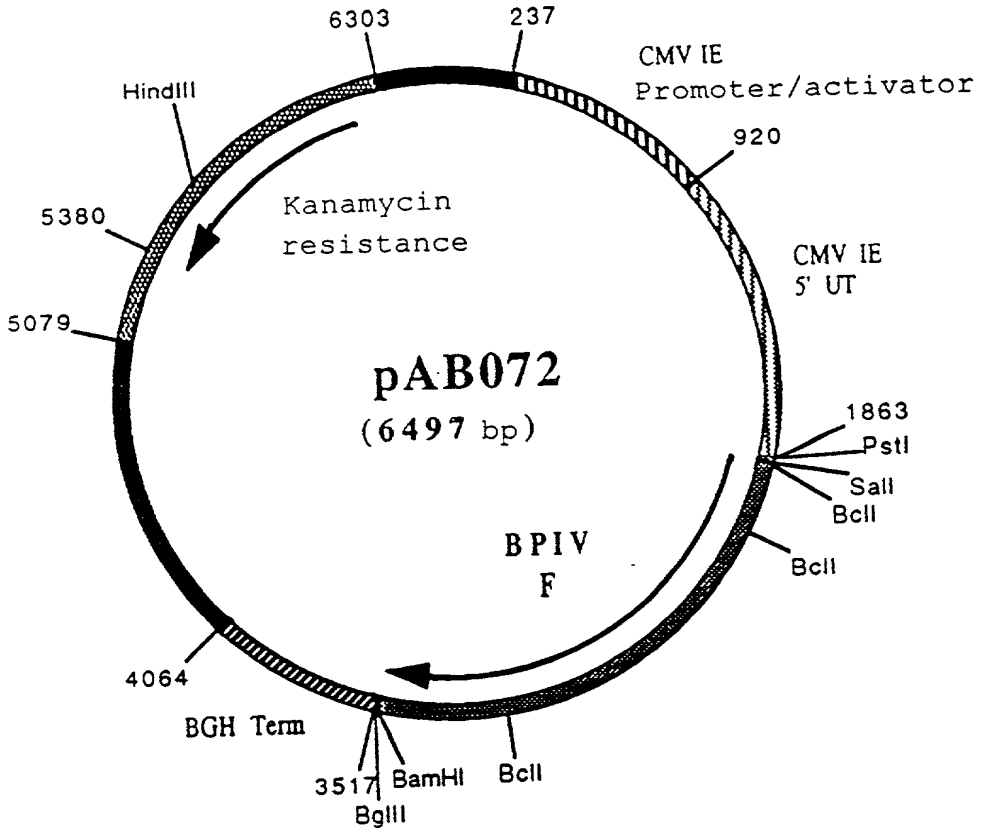
6303
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
5380
CMV IE
5' UT
5079
pAB072
(6497 bp)
1863
PstI
SalI
BclI
BPIV
F
BclI
4064
BGH Term
3517
BamHI
BclI
BglII

Figure No. 11